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RAW SEQUENCE LISTING

DATE: 04/26/2002

PATENT APPLICATION: US/09/942,090

TIME: 14:24:43

Input Set : N:\Crif3\RULE60\09942090.raw

Output Set: N:\CRF3\04262002\I942090.raw

1 <110> APPLICANT: Case, Casey C.
 2 Zhang, Lei
 3 Sangamo Biosciences, Inc.
 4 <120> TITLE OF INVENTION: Functional Genomics Using Zinc Finger Proteins
 5 <130> FILE REFERENCE: 019496-002000US
 6 <140> CURRENT APPLICATION NUMBER: 09/942,090
 7 <141> CURRENT FILING DATE: 2001-08-28
 9 <150> PRIOR APPLICATION NUMBER: 09/395,448
 10 <151> PRIOR FILING DATE: 1999-09-14
 12 <150> PRIOR APPLICATION NUMBER: 09/229,007
 13 <151> PRIOR FILING DATE: 1999-01-12
 14 <150> PRIOR APPLICATION NUMBER: 09/229,037
 15 <151> PRIOR FILING DATE: 1999-01-12
 16 <160> NUMBER OF SEQ ID NOS: 23
 17 <170> SOFTWARE: PatentIn Ver. 2.1
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 25
 21 <212> TYPE: PRT
 22 <213> ORGANISM: Artificial Sequence
 23 <220> FEATURE:
 24 <223> OTHER INFORMATION: Description of Artificial Sequence:exemplary motif
 25 of C2H2 class of zinc finger proteins (ZFP)
 W--> 26 <221> NAME/KEY: MOD_RES
 27 <222> LOCATION: (2)..(3)
 28 <223> OTHER INFORMATION: Xaa = any amino acid
 W--> 29 <221> MOD_RES
 30 <222> LOCATION: (4)..(5)
 31 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
 W--> 32 <221> MOD_RES
 33 <222> LOCATION: (7)..(18)
 34 <223> OTHER INFORMATION: Xaa = any amino acid
 W--> 35 <221> MOD_RES
 36 <222> LOCATION: (20)..(22)
 37 <223> OTHER INFORMATION: Xaa = any amino acid
 W--> 38 <221> MOD_RES
 39 <222> LOCATION: (23)..(24)
 40 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
 W--> 41 <400> 1
 W--> 42 Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 43 1 5 10 15
 W--> 44 Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
 45 20 25
 47 <210> SEQ ID NO: 2

ENTERED

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48 <211> LENGTH: 10
49 <212> TYPE: DNA
50 <213> ORGANISM: Artificial Sequence
51 <220> FEATURE:
52 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP target site
53     with two overlapping D-able subsites
W--> 54 <221> NAME/KEY: modified_base
55 <222> LOCATION: (1)..(2)
56 <223> OTHER INFORMATION: n = g, a, c or t
W--> 57 <221> modified_base
58 <222> LOCATION: (5)
59 <223> OTHER INFORMATION: n = g, a, c or t
W--> 60 <221> modified_base
61 <222> LOCATION: (8)
62 <223> OTHER INFORMATION: n = g, a, c or t
W--> 63 <221> modified_base
64 <222> LOCATION: (9)
65 <223> OTHER INFORMATION: n = a, c or t; if g, then position 10 cannot be g
66     or t
W--> 67 <400> 2
W--> 68     nngkngknnn                                10
70 <210> SEQ ID NO: 3
71 <211> LENGTH: 10
72 <212> TYPE: DNA
73 <213> ORGANISM: Artificial Sequence
74 <220> FEATURE:
75 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP target site
76     with three overlapping D-able subsites
W--> 77 <221> NAME/KEY: modified_base
78 <222> LOCATION: (1)..(2)
79 <223> OTHER INFORMATION: n = g, a, c or t
W--> 80 <221> modified_base
81 <222> LOCATION: (5)
82 <223> OTHER INFORMATION: n = g, a, c or t
W--> 83 <221> modified_base
84 <222> LOCATION: (8)
85 <223> OTHER INFORMATION: n = g, a, c or t
W--> 86 <400> 3
W--> 87     nngkngkngk                                10
89 <210> SEQ ID NO: 4
90 <211> LENGTH: 5
91 <212> TYPE: PRT
92 <213> ORGANISM: Artificial Sequence
93 <220> FEATURE:
94 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
95 <400> SEQUENCE: 4
96     Asp Gly Gly Gly Ser
97         1             5
99 <210> SEQ ID NO: 5

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Input Set : N:\Crif3\RULE60\09942090.raw

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100 <211> LENGTH: 5
101 <212> TYPE: PRT
102 <213> ORGANISM: Artificial Sequence
103 <220> FEATURE:
104 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
105 <400> SEQUENCE: 5
106 Thr Gly Glu Lys Pro
107 1 5
109 <210> SEQ ID NO: 6
110 <211> LENGTH: 9
111 <212> TYPE: PRT
112 <213> ORGANISM: Artificial Sequence
113 <220> FEATURE:
114 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
115 <400> SEQUENCE: 6
116 Leu Arg Gln Lys Asp Gly Glu Arg Pro
117 1 5
119 <210> SEQ ID NO: 7
120 <211> LENGTH: 4
121 <212> TYPE: PRT
122 <213> ORGANISM: Artificial Sequence
123 <220> FEATURE:
124 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
125 <400> SEQUENCE: 7
126 Gly Gly Arg Arg
127 1
129 <210> SEQ ID NO: 8
130 <211> LENGTH: 5
131 <212> TYPE: PRT
132 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
135 <400> SEQUENCE: 8
136 Gly Gly Gly Gly Ser
137 1 5
139 <210> SEQ ID NO: 9
140 <211> LENGTH: 8
141 <212> TYPE: PRT
142 <213> ORGANISM: Artificial Sequence
143 <220> FEATURE:
144 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
145 <400> SEQUENCE: 9
146 Gly Gly Arg Arg Gly Gly Gly Ser
147 1 5
149 <210> SEQ ID NO: 10
150 <211> LENGTH: 9
151 <212> TYPE: PRT
152 <213> ORGANISM: Artificial Sequence
153 <220> FEATURE:

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154 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
155 <400> SEQUENCE: 10
156     Leu Arg Gln Arg Asp Gly Glu Arg Pro
157         1             5
159 <210> SEQ ID NO: 11
160 <211> LENGTH: 12
161 <212> TYPE: PRT
162 <213> ORGANISM: Artificial Sequence
163 <220> FEATURE:
164 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
165 <400> SEQUENCE: 11
166     Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
167         1             5             10
169 <210> SEQ ID NO: 12
170 <211> LENGTH: 16
171 <212> TYPE: PRT
172 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
175 <400> SEQUENCE: 12
176     Leu Arg Gln Lys Asp Gly Gly Gly Ser Gly Gly Gly Ser Glu Arg Pro
177         1             5             10             15
179 <210> SEQ ID NO: 13
180 <211> LENGTH: 97
181 <212> TYPE: PRT
182 <213> ORGANISM: Artificial Sequence
183 <220> FEATURE:
184 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP sequence in
185     control construct
186 <400> SEQUENCE: 13
187     Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
188         1             5             10             15
189     Lys Val Tyr Gly Gly His Asp Thr Val Val Gly His Leu Arg Trp His
190             20             25             30
191     Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
192             35             40             45
193     Phe Thr Ala Ala Asp Glu Val Gly Leu His Lys Arg Thr His Thr Gly
194             50             55             60
195     Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Leu Val
196             65             70             75             80
197     Val Ala Thr Gln Leu His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
198             85             90             95
199     Ser
201 <210> SEQ ID NO: 14
202 <211> LENGTH: 292
203 <212> TYPE: DNA
204 <213> ORGANISM: Artificial Sequence
205 <220> FEATURE:
206 <223> OTHER INFORMATION: Description of Artificial Sequence:designed ZFP

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207      construct (from KpnI to BamHI) targeting 9-base
208      pair target site in VEGF promoter
W--> 209 <221> NAME/KEY: CDS
210 <222> LOCATION: (2)..(292)
W--> 211 <400> 14
212      g gta ccg ggc aag aag aag cag cac atc tgc cac atc cag ggc tgt ggt 49
213      Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
214      1          5          10          15
215      aaa gtt tac ggc cgc tcc gac aac ctg acc cgc cac ctg cgc tgg cac 97
216      Lys Val Tyr Gly Arg Ser Asp Asn Leu Thr Arg His Leu Arg Trp His
217      20          25          30
218      acc ggc gag agg cct ttc atg tgt aca tgg tcc tac tgt ggt aaa cgc 145
219      Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
220      35          40          45
221      ttc acc aac cgc gac acc ctg gcc cgc cac aag cgt acc cac acc ggt 193
222      Phe Thr Asn Arg Asp Thr Leu Ala Arg His Lys Arg Thr His Thr Gly
223      50          55          60
224      gag aag aaa ttt gct tgt ccg gaa tgt ccg aag cgc ttc atg cgc tcc 241
225      Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser
226      65          70          75          80
227      gac cac ctg tcc aag cac atc aag acc cac cag aac aag aag ggt gga 289
228      Asp His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
229      85          90          95
230      tcc 292
231      Ser
233 <210> SEQ ID NO: 15
234 <211> LENGTH: 97
235 <212> TYPE: PRT
236 <213> ORGANISM: Artificial Sequence
237 <220> FEATURE:
238 <223> OTHER INFORMATION: Description of Artificial Sequence:designed ZFP
239 <400> SEQUENCE: 15
240      Val Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly
241      1          5          10          15
242      Lys Val Tyr Gly Arg Ser Asp Asn Leu Thr Arg His Leu Arg Trp His
243      20          25          30
244      Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg
245      35          40          45
246      Phe Thr Asn Arg Asp Thr Leu Ala Arg His Lys Arg Thr His Thr Gly
247      50          55          60
248      Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser
249      65          70          75          80
250      Asp His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Gly
251      85          90          95
252      Ser
254 <210> SEQ ID NO: 16
255 <211> LENGTH: 25
256 <212> TYPE: DNA
257 <213> ORGANISM: Artificial Sequence

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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 04/26/2002
 PATENT APPLICATION: US/09/942,090 TIME: 14:24:44

Input Set : N:\Crf3\RULE60\09942090.raw
 Output Set: N:\CRF3\04262002\I942090.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,20,21,22,23,24

Seq#:2; N Pos. 1,2,5,8,9,10

Seq#:3; N Pos. 1,2,5,8

VERIFICATION SUMMARY

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Input Set : N:\Crf3\RULE60\09942090.raw

Output Set: N:\CRF3\04262002\I942090.raw

L:26 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:29 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1
L:32 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1
L:35 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1
L:38 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1
L:41 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1
L:42 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:44 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:16
L:54 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:57 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:2
L:60 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:2
L:63 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:2
L:67 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:2
L:68 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:77 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:80 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3
L:83 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3
L:86 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3
L:87 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:209 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:211 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:14